Chief Engineer, Tug, Class II **Bmk. No. C-28**
XH-4742-07

MAJOR DUTIES

Serves as Chief Engineer on a Class II tug (under 65') diesel-powered tugboat engaged in waterway maintenance. Exercises responsibility for the operation, maintenance, and repair of all engine room and associated machinery, refrigeration, plumbing, heating, and hydraulic/electric/electronic systems.

1. Operates engines and other machinery such as bilge, fire and fuel pumps, high pressure air compressors, air tanks, hot water heating systems, and the electrical system. Is responsible for having engine in readiness for accomplishing directions received from the Master.

2. Tends and services all vessel equipment and maintains the engine room in a clean and orderly condition. Inspects electrical wiring, lights and motors, and makes repairs or replacements where needed. Cleans bilges. Inspects and tests air and fuel tanks, gauges and safety valves. Repacks stuffing box on propeller shaft and aligns shaft. Assures compliance with safety requirements in maintenance as well as operations of all plant. Furnishes information as to the status of work and compiles workload data pertinent to the impact of repairs on operations plans and requirements. Maintains and secures all tools, supplies, and equipment issued to the engine room department.

3. Prepares machinery and equipment for preservation during lay-up. Discusses with the tug master the nature and extent of vessel and equipment repairs and/or alterations to be accomplished during the off-season lay-up. Supervises all repairs made to vessel mechanical and electrical equipment during annual lay-up repairs. Incumbent may be assigned to the maintenance and repair of floating plant or other essential duties during annual lay-up periods.

Performs other duties as assigned.

SKILLS AND KNOWLEDGES

--Must hold a U.S. Coast Guard Chief Engineer's license commensurate with the type engine room machinery and equipment, horsepower, and characteristics of the vessel to which assigned.

--A knowledge of the vessel diesel, electric, mechanical, hydraulic and/or electronic equipment, systems, and auxiliary plant and machinery, and the related knowledge and skill requirements to diagnose problems and malfunctions and supervise and participate in the repair, replacement, and modification of such machinery, engines, and systems. Applies the knowledge to understand how such equipment and systems operate individually or in combination and the ability to plan and lay out repair, replacement, maintenance, and modification plans and requirements ranging from those of a minor nature to those of extreme complexity. Applies a knowledge of the fuel, water, and waste treatments associated with the various equipment and systems.

--Knowledge and ability to interpret and apply working drawings, sketches, diagrams, blueprints, and various information reflected in technical manuals. Applies a knowledge of advanced shop math to accomplish computations pertinent to electricity and electronics, electronic equipment, air

conditioning and heating, refrigeration and mechanical dimensions, tolerances and voltages. Applies skill and knowledge in the use of a variety of testing instruments including refrigeration gages, ammeters, ohmmeters, and temperature testers in diagnosing problems and malfunctions, and a variety of measuring devices including feeler gages, vernier calipers, inside and outside calipers and micrometers, thread gages, dial indicators, screw pitch gages, protractors, dividers, composers, steel squares, clinometers, etc. Applies skill to accomplish work to tolerances of .001 inch.

--Knowledge of the uses of lathes, shapers, and milling machines to understand the processes necessary for certain repairs. Knowledge and skill in the use of drill press, honing equipment, grinders, jig borers, jig grinders, power hacksaws, electric and acetylene welding and flame cutting processes, and a variety of electric and hand tools common to the trades involved. Applies a knowledge of the characteristics of a variety of metals and alloys such as stainless, monel, brass, bronze, babbit, silver, aluminum, mild and hardened steels, etc.

RESPONSIBILITY

Works under the general supervision of the Master. Receives oral and written assignments including blueprints, drawings, and charts. Plans and accomplishes work in accordance with standard procedures, directives, regulations, U.S. Coast Guard regulations, and overall marine requirements. Receives no technical guidance or technical supervision in operation and repair of engine room facilities and exercises independent judgment and initiative in connection with the operation and maintenance of all mechanical and electrical equipment. Work is subject to spot checks for proficiency of performance as determined from continuity of operation. Engine room facilities are subject to periodic inspections by U.S. Coast Guard for compliance with marine safety regulations.

WORKING CONDITIONS

Work is performed inside and outside subjecting employee to varying climatic conditions, abnormal noises, temperature, danger of burns, irritation from grease and oils, bruises, strains, danger from attending moving machinery, falling overboard, electrical shock, falls on slippery decks or steep stairways, possible drowning, and crankcase explosion. A lifejacket is worn at all times while on deck.

PHYSICAL EFFORT

Incumbent performs work from ladders, scaffolding, and platforms and where the parts, equipment, or systems are in hard-to-reach places. Work requires the incumbent to stand, stoop, bend, kneel, crawl, climb, and work in a tiring and uncomfortable position. Frequently lifts, carries, and sets up parts and equipment that weighs up to 40 pounds.

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CHIEF ENGINEER, TUG, CLASS II
XH-4742-07
EVALUATION STATEMENT

1. REFERENCES:

   a. OPM, JGS, Utility Systems Repairer-Operator Series, WG-4742, July 1993.

   b. U.S. Army Corps of Engineers Ladder Diagram

2. SERIES AND TITLE DETERMINATION:

Position serves a Chief Engineer on a Class II tug (under 65') diesel-powered tugboat. Duties require knowledge of the vessel diesel, electric, mechanical, hydraulic and/or electronic equipment, systems, and auxiliary plant and machinery, and the related knowledge and skill requirements to diagnose problems and malfunctions and supervise and participate in the repair, replacement, and modification of such machinery, engines, and systems. Employee must hold a U.S. Coast Guard Chief Engineer's license commensurate with the type engine room machinery and equipment, horsepower, and characteristics of the vessel to which assigned. Position is allocated to the WG-4742 series. Position is titled Chief Engineer, Tug, Class II, in keeping with prevailing maritime titling practices. The absence of the requirement for a Chief Engineer's license precludes classification as Chief Engineer, Towboat.

3. GRADE DETERMINATION:

The grade of the Chief Engineer is ranked one grade level below that of the Master, Tug, Class II. Position is classified as Chief Engineer, Tug, Class II, XH-4742-07.

NOTES ON USING THIS BENCHMARK

Licensed floating plant positions are ranked based on private industry practices. The Chief Engineer is ranked one level below the Master. If the duties, responsibilities and grade of the Master, Tug, Class II, as well as the vessel characteristics, are significantly greater than this benchmark, the grade of the Chief Engineer may be graded higher as well.